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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,041	02/06/2004	Fufang Zha	2002P87049WOUS	4995

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EXAMINER	
MENON, KRISHNAN S	

ART UNIT	PAPER NUMBER
1723	

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/774,041	ZHA ET AL.	
	Examiner	Art Unit	
	Krishnan S. Menon	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-13 and 25 are pending as amended, 7/20/06

Information Disclosure Statement

The information disclosure statement filed 7/20/06 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. The foreign language references have been placed in the application file, but the information referred to therein has not been considered. Duplicate entries previously considered were also crossed out.

A concise explanation on the relevance of the submitted foreign references to the claimed invention is required in lieu of a complete translation. The explanation applicant submitted fails to address this requirement.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 and 19-23 of copending Application No. 10/572,893 in view of Sunaoka et al (US 5,209,852). Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in both applications is the same, except for the step of the fast drain using compressed air, which step is taught by Sunaoka. It would be obvious to one of ordinary skill in the art at the time of invention to use the fast drain as taught by Sunaoka in the claims of '893 application to blow down the accumulated dirt in the tank (see Sunaoka column 9 lines 1-21).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Terminal Disclaimer

The terminal disclaimer filed on 7/20/06 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 7,018,533 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-13 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by, or in the alternative, under 35 USC 103(a) as being obvious over, Sunaoka et al (US 5,209,852).

Sunaoka teaches a process of treating wastewater containing solids using a hollow fiber membrane system (figures and abstract) and cleaning the system as claimed. Cleaning steps comprises suspending filtration, dislodging contaminants using air bubble scrub (abstract), backwashing (column 1 lines 45-50: flowing water during or after scrub is known in the art; column 10 lines 58-64: using gas), and quick draining of the tank by gravity or using compressed air (column 8 line 63 – column 9 line 6). Use of compressed air would inherently generate a gas containing region in the tank (a head space) of the reference, as claimed. Sealing the tank (feed containing vessel) before pressurizing would be implied by the reference, without which the vessel would not hold

the pressure; opening the tank to atmosphere, which is to the drain, also is implied, for the draining to happen. The reference teaches fast draining (column 9 lines 1-7); draining speed can be optimized as seen in column 10 lines 28-35. Air is introduced through a side for scrubbing (see figure 2: air nozzle 15B). The sweep is in different directions – air sweep by scrubbing air from bottom to top; sweep by draining water from top to bottom. The reference teaches that compressed gas can be introduced through any of the nozzles in the figure 2 (column 8 line 63 – column 9 line 6) for draining the tank. The gas containing region in a 'further vessel' (as in claim 11) would be implied or inherent in Sunaoka because compressed air is delivered form a compressor/air tank, which are vessels. "[I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968); In re Lamberti, 545 F.2d 747, 750, 192 USPQ 278, 280 (CCPA 1976). The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. "The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness." In re Napier, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references). See also In re Grasselli, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983).

Regarding claims 13 and 25, the pressure between the two sides of the membrane would equalize when the tank is sealed for pressurizing, when done

simultaneously with compressed air backwash as cited in column 10 lines 58-65, because the membrane is highly permeable, and there would be no flow through the tank or the membrane. This would be an inherent characteristic of the system. Depressurization of the tank to drain the tank would drop the pressure in the tank, and would result in an instantaneous backwash flow from the inside of the membrane to the tank during draining.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 9-13 and 25 are rejected under 35 U.S.C. 103(a) as unpatentable over Beck, et al (US 6,159,373).

Beck teaches the process of filtering and cleaning a hollow fiber membrane submerged in water. The process comprises stopping filtration, pressurizing the lumen of the hollow fibers with a gas (which is a region in the feed vessel) after closing the outlet valve, and then opening the outlet valve to decompress the gas, which expands to back-flush the membrane and sweep the outer surface of the membrane as claimed. See column 1 line 35 – column 2 line 67, column 5 lines 45). Additional vessel of compressed gas is taught in lines 35-40, column 5, to prolong the compressed gas flow

through the lumen of the fibers. Liquid back flush is taught in lines 13-20: permeate in the lumen is back drained by gas in the lumen.

With respect to the pressurizing of a gas containing region, and then opening the vessel to the atmosphere to produce a sweep of the vessel, see column 5 lines 13-45. Even though the process steps described are not identical, they would be obvious to one of ordinary skill in the art because the reference teaches pressurizing the lumen side with the feed side of the membrane with the vessel or housing sealed. This would equalize pressure on both sides of the membrane since the membrane is highly permeable. After such pressurizing, the feed side of the membrane module is opened to 'explosively depressurize' the system, which would obviously sweep or flush liquid from the feed side of the module. The reference teaches that the gas would not penetrate the membrane during pressurization because the feed side is full of liquid, and the liquid is incompressible. However the pressure would equalize by principle of hydraulics, since there is no flow. The reference may not be describing "a gas containing region on the first side" as claimed, which, could be arguable as "required to sustain the sweep for a period of time"; however, the reference teaches that the explosive decompression can be sustained for a while by providing larger diameter inlet ports 16 and 18, etc., which would make the process step an obvious equivalent.

Response to Arguments

Applicant's arguments filed 7/20/06 have been fully considered but they are not persuasive.

Arguments are addressed in the rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/K S Menon/ 7/28/06

Krishnan S Menon
Examiner
Art Unit 1723